New genes containing a DNA sequence coding for hydroxynitrile lyase, which genes can be prepared via a primer combination based on the DNA sequence of of the 5'-region of the mdl genes from Prunus serotina from Prunus amygdalus and/or a primer 2 based on the 3'-region of \the DNA sequences of one of hydroxynitrile lyase isoenzymes from Prunus serotina or from Prunus amygdalus, subsequent amplification with a DNA polymerase using a DNA from organisms, containing genes coding for hydroxynitrile lyase, as templates and cloning, and also recombinant proteins which can be suitable host cells prepared in by heterologous expression of the DNA sequence of said HNL genes, and proteins and fusion proteins derived therefrom and use of said proteins for preparing (R)-or (S)-cyanohydrins.